Takemasa OSADA*: **A short criticism on Brotherus' new *Pogonatum* in H. Handel-Mazzetti's "Symbolae Sinicae"**

長田武正*: Symbolae Sinicae に発表されたコスギゴケ属植物に対する寸評

In Handel-Mazzetti's "Symbolae Sinicae" V. F. Brotherus (1929) reported 16 species of *Pogonatum* from southwestern China based on 26 specimens collected there. They are as follows: *P. spinulosum*, *P. aloides***, *P. kweitchouense****, *P. subfuscatum****, *P. inflexum*, *P. spurio-cirratum***, *P. fastigiatum***, *P. microstomum*, *P. submicrostomum****, *P. macrocarpum****, *P. nudiusculum* f. *minus***, *P. handelii****, *P. setchwanicum****, *P. perichaetiale*, *P. muticum**** and *P. urnigerum*. Fortunately I could examine the isotype specimens of all the Brotherus' species preserved in K. Sakurai's collection in MAK. This paper is intended to review the new species and other avilable ones.

(1) **Pogonatum spurio-cirratum** Broth., Philipp. Journ. Sci. Bot. **5**: 150 (1910)—*P. kweitchouense* Broth. in Hand.-Mazzet. Symb. Sinic., Musci, 133 (1929) syn. nov.—Fig. 7.

The isotype (no. 10983) of *P. kweitchouense* is merely a dwarf form of *P. spurio-cirratum*. The same form is found also in Japan, but it can not be distinguished from the larger form of *P. spurio-cirratum* as a different taxon.

(2) **Pogonatum subfuscatum** Broth. ibid. 134 (1929).

The leaves of the isotype (no. 8244) of this species are too fragile and crispate to be examined in detail. However, it seems to be most related to (conspecific with ?) *P. rufisetum* from the Himalayas.

(3) **Pogonatum fastigiatum** Mitt. in Journ. Linn. Soc. Suppl. **1**: 154 (1859)—*P. arisanense* Sh. Okam. in Journ. Coll. Sci. Imp. Univ. Tokyo **38**: 21 (1916) syn. nov.

I examined one (no. 8409) of the three specimens cited by Brotherus, and I agree with him. This species is allied to *P. grandifolium* in the very robust habit, but is clearly distinguished from the latter by the smooth marginal cells of lamellae and the sharply serrate leaf-sheath. I also compared the holotype specimen of *P. arisanense* from Formosa (Coll. B. Hayata in herb. NICH) with that of *P. fastigiatum* from the Himalayas (Mitt. no. 1182 in herb. NY), and

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** Species new to China. *** Species new to science.

found that they are quite identical to each other. The former should pass into the synonym of the latter.

(4) **Pogonatum microstomum** (R. Br.) Brid., Bryol. Univ. **2**: 743 (1827) —*P. macrocarpum* Broth. ibid. 135 (1929) syn. nov. Fig. 13—17.

The duplicate specimen of no. 2199 is certainly *P. microstomum* as labelled by Brotherus. And the isotype (no. 685) of *P. macrocarpum* is hardly distinguished from *P. microstomum* except for the slightly narrower capsule and the narrower leaf-blade with markedly involute margins. *P. macrostomum* may be merely a modification of *P. microstomum*.

(5) **Pogonatum submicrostomum** Broth. ibid. 134 (1929). Fig. 8—12.

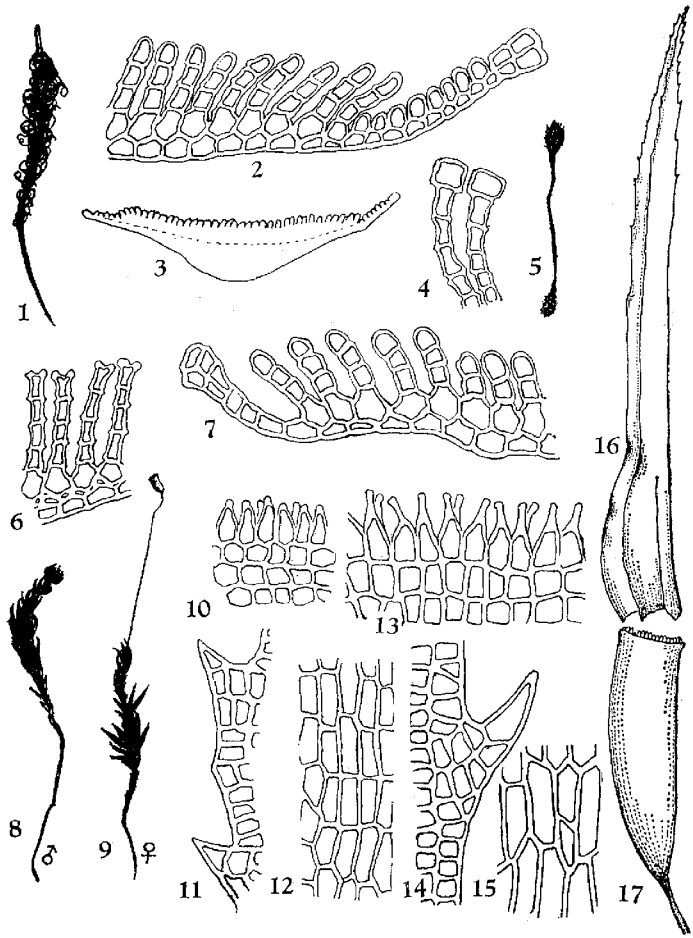
In his original description Brotherus noted "Species a *P. microstomo* foliis brevibus jam differt." By examining the isotype specimens (no. 7508, 6870) of this species I found that they differ from the usual form of *P. microstomum* in the dioicous inflorescence, the smaller size in general and the smaller leaf-cells. The marginal cells of lamellae are about 20 $\mu$ long, and the cells of leaf-sheath are 20–34×8–11 $\mu$ in the median region. These cells are of about half the size of those of *P. microstomum* (see fig. 10–15). Moreover the packet (no. 6870) contains a male plant with a conspicuous terminal cup. *P. microstomum* from the Himalayas is monoicous, and after Gangulee and Chattergee (1960) it is a diploid plant with n=14 chromosomes. It might be surmised that the diocous plant is n=7 race and the monoicous one is n=14 race as is case with *Atrichum undulatum* (see Noguchi and Osada, 1960). I do not think *P. submicrostomum* merits a specific rank. However, it seems better to reserve the name for the monoicous race of *P. microstomum* until the group is fully studied both cytologically and morphologically.

(6) **Pogonatum nudiusculum** Mitt. in Journ. Linn. Soc. Suppl. **1**: 153 (1895)—*P. nudiusculum* Mitt. f. *minus* Broth. ibid. 135 (1929) syn. nov.

The specimen (no. 6269) of f. *minus* seems to be a modification of *P. nudiusculum* and does not merit a taxon.

(7) **Lyellia crispa** R. Br. in Trans. Linn. Soc. **12** (2): 561 (1918)—*Pogonatum handelii* Broth., l. c. (1929) syn. nov. Fig. 1–3.

The isotype specimen (no. 6396) of *P. handelii* is a small plant with strongly contorted or circinate leaves. The packet contains three plants, one of which has a young calyptra slightly projected from the comal leaves. Judging from the nearly naked calyptra with a few hairs only near the tip and the structure




1-3. *Lyellia crispa* R. Br. (no. 6396, isotype of *Pogonatum handelii* Broth.); 4, 5. *Pogonatum perichaetiale* (Mont.) Jaeg. (no. 2844, isotype of *P. setchwanicum* Broth.); 6. *P. akitense*, Besch. (no. 233, isotype of *P. muticum* Broth.); 7. *P. spurio-cirratum* Broth. (no. 10983, isotype of *P. kweitchouense* Broth.); 8-12. *P. submicrostomum* Broth. (8 from no. 6870, 9-12 from no. 7508); 13-17. *P. microstomum* (R. Br.) Brid. (13-15 from no. 2199, 16 and 17 from no. 685, isotype of *P. macrocarpum*). 1, 5, 8, 9. Plants in dried conditon, × 1. 2, 4, 6, 7. Cross-Sections of lamellae, ×270. 3. Cross-section of leaf, × 65. 10, 13. Lateral views of lamellae, × 270. 11, 14. Cells from leaf-margins × 270. 12, 15. Cells from the median regions of leaf-sheaths, × 270. 16. Leaf, × 11. 17. Capsule, × 5.5.

of the leaves, *P. handelii* is certainly conspecific with *Lyellia crispa*.

(8) **Pogonatum perichaetiale** (Mont.) Jaeg., Adumb. Fl. Musc. **1**: 719 (1873-1874)—*P. setchwanicum* Broth. ibid. 136 (1929) syn. nov. Fig. 4, 5.

Brotherus reported *P. perichaetiale* based on three specimens, one (no. 2571) of which was examined by me, and I agree with his indentification. Besides he described *P. setchwanicum* as new and says "Species *P. tortipedi* (Wils.) Jaeg. affinis, sed foliis integris,.....". His description is well referable to *P. perichaetiale*, and the isotype specimen (no. 2844) of *P. setchwanicum* is just the typical form of *P. perichaetiale*.

(9) **Pogonatum akitense** Besch. in Ann. Sci. Nat. Bot. **17**: 454 (1893)—*P. muticum* Broth, l. c. (1929). Fig. 6.

The isotype (no. 233) of *P. nuticum* seems to be a depauperate form of *P. akitense*. *P. akitense* from Japan is a very variable species, and some modifications with short leaves and nearly turbinate capsules come near *P. muticum*.

The specimens of the remnant 4 out of 16 species, being not available for study, are left uncommented in this paper. As mentioned above 5 of the 7 Brotherus species seem not to merit independent taxa.

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V. F. Brotherus は H. Handel-Mazzetti の大著 Symbolae Sinicae の中に，西南支那で採集された計 26 点の標本をもとに，16 種のコスギゴケ属を記録している (1929)。その内7種までが新種であるが，牧野標本館に収められた桜井コレクションの中には，これ等全部の副基準標本が保存されている。筆者はそれを調査した結果7種の内，5種までが既知種の異名となることを知った。特にそのうちの *Pogonatum hanelii* が，全く別属の *Lyellia crispa* の異名であることは，注意を要することである。